

REMARKS/ARGUMENTS

Favorable reconsideration and allowance of the present application is respectfully requested. Claims 1 and 5-10 are pending in the above application, of which claims 1 and 5 are independent.

The Office Action dated June 9, 2010, has been received and carefully reviewed. In that Office Action, claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0128514 (hereinafter, "Nakagawa") in view of Jaffe, and claims 1 and 7-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa and Jaffe and further in view of EP 1154042 (hereinafter, "Kojima"). It is believed that all claims patentably distinguish over the art of record, and reconsideration and allowance of claims 1 and 5-10 is respectfully requested in view of the following remarks.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa in view of Jaffe. It is respectfully submitted that Jaffe is non-analogous art that cannot properly be combined with Nakagawa. Moreover, even if Jaffe is determined to be analogous art, it does not stand for the proposition for which it is cited and in no manner suggests a modification to Nakagawa that would result in the invention of claim 5. Each of these issues is addressed below.

In order to be considered analogous art, a reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. *In re Oetiker*, 24 U.S.P.Q. 2d 1443, 1445 (Fed. Cir. 1992). "A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with

which it deals, logically would have commended itself to an inventor's attention in considering his problem." *In re Clay*, 23 U.S.P.Q. 2d 1058, 1060-61 (Fed. Cir. 1992). Claim 5 is directed to a heat exchanger coated with nanoparticle layers containing specific materials that provide, inter alia, corrosion resistance and hydrophilicity. Jaffe is directed toward an adsorbent sheet material for parallel passage contactors which are apparently used for gas separation. The Jaffe reference is not in the field of heat exchangers and does not appear to have any relevance to the problem faced by the present inventors. Jaffe therefore fails the first prong of the non-analogous art test. Moreover, nothing in the record suggests that one seeking to improve heat exchangers would have looked to the parallel passage contactor and/or gas adsorption arts for possible solutions. Jaffe therefore also fails the second prong of the non-analogous art test and is submitted to be non-analogous prior art. Nakagawa does not show all features of claim 5 and Jaffe is non-analogous art. Claim 5 is therefore submitted to be allowable over these references.

If Jaffe is used in a further rejection, it is respectfully requested that the examiner explain how Jaffe is being interpreted to be in the heat exchanger field and/or why one seeking to improve heat exchangers would have looked to the gas adsorption and/or parallel passage contactor arts for possible solutions to heat exchanger problems.

Even if Jaffe is established to be analogous art, it is respectfully submitted that it does not stand for the proposition for which it is cited. The Office Action cites Jaffe to show that "adsorbent particulates in the form of inorganic oxide nanoparticles of silica and ceria (i.e. cerium oxide) are obvious variants of one another." The section of Jaffe cited to support this assertion merely lists silica and ceria as examples of inorganic

oxide nanoparticles - there is no description of the properties of the different types of particle, no indication that they are used interchangeably, and no indication that they are obvious variants of one another. Moreover, even assuming *arguendo* that silica and ceria could be substituted for one another on an adsorbent sheet in a parallel passage contactor, nothing in the record suggests that they could be substituted for one another in a heat exchanger coating. A mere listing of materials does not establish that they are "obvious variants" of each other for a given purpose much less for all possible purposes. For this reason as well, the combination of Nakagawa and Jaffe does not show or suggest the invention of claim 5, and claim 5 is submitted to be allowable over the art of record for at least this reason.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa in view of Jaffe and further in view of Kojima. The rejection of claim 1 requires that Nakagawa be modified based on Jaffe for the same reasons as were presented in the rejection of claim 5. However, as argued above in connection with claim 5, Jaffe is non-analogous art and does not stand for the proposition for which it is cited. Nakagawa and Kojima do not show all features of claim 1. Claim 1 is therefore submitted to be allowable over the art of record for at least the same reasons as claim 5.

In addition, claim 1 recites heat transfer surfaces that include a first layer having certain properties and a second layer different than the first layer. The Office Action indicates that Nakagawa includes a first layer of alumina nanoparticles and a second layer of silica nanoparticles. However, it is respectfully submitted that such layers are not disclosed in Nakagawa. Instead, Nakagawa discloses one embodiment in which "alumina fine particles" are used and an embodiment which contains a combination of

alumina and silica. Nothing in Nakagawa suggests first and second different layers as claimed. Nakagawa does not satisfy this limitation of claim 1, Jaffe and Kojima do not address this shortcoming of Nakagawa, and claim 1 is submitted to be allowable for at least this reason.

If the rejection of claim 1 is maintained, it is respectfully requested that the examiner explain how Nakagawa is being interpreted to show first and second layers of material instead of one embodiment using alumina and one embodiment using a combination of alumina and silica.

Claims 6-10 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

CONCLUSION

Each issue raised in the Office Action dated June 9, 2010, has been addressed, and it is believed that claims 1 and 5-10 are in condition for allowance. Wherefore, reconsideration and allowance of these claims is earnestly solicited. If the examiner believes that any additional changes would place the application in better condition for allowance, the examiner is invited to contact the undersigned attorney at the telephone number listed below.

Deposit Account Authorization

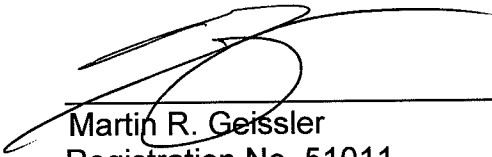
To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit

Serial No. 10/580,656
Reply to Office Action dated June 9, 2010

Docket No. 1006/0146PUS1

Account 50-3828 and please credit any excess fees to such deposit account.

Respectfully submitted,



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